**CASE STUDY**

1. **What is the purpose of route 53 and significance of DNS in the context of Route 53 ?**

**Route 53**

Amazon Route 53 (Route 53) is a scalable and highly available Domain Name System (DNS) service.

The name is a reference to the TCP/UDP port 53, where DNS server requests are addressed.

In addition to being able to route users to various AWS services, including EC2 instances, Route 53 also enables AWS customers to route users to non-AWS infrastructure and to monitor the health of their application and its endpoints.

Route 53's servers are distributed throughout the world. Amazon Route 53 supports full, end-to-end DNS resolution over IPv6.

Recursive DNS resolvers on IPv6 networks can use either IPv4 or IPv6 transport to send DNS queries to Amazon Route 53.[4]

Customers create "hosted zones" that act as a container for four name servers. The name servers are spread across four different TLDs. Customers are able to add, delete, and change any DNS records in their hosted zones.

Amazon also offers domain registration services to AWS customers through Route 53.

Amazon provides an SLA of the service always being available at all times (100% available).

One of the key features of Route 53 is programmatic access to the service that allows customers to modify DNS records via web service calls.

Combined with other features in AWS, this allows a developer to programmatically bring up a machine and point to components that have been created via other service calls such as those to create new S3 buckets or EC2 instances.

1. **What is Amazon Cloud Front, and what problem does it solve ?**

**Amazon CloudFront**

Amazon CloudFront is a content delivery network (CDN) service provided by Amazon Web Services (AWS).

It helps deliver content, such as web pages, videos, images, and other files, to users with low latency and high data transfer speeds.

CloudFront solves the problem of latency and slow loading times by caching content at edge locations around the world, closer to the end-users.

This reduces the distance data needs to travel, improving overall performance and user experience.

Additionally, it helps offload traffic from origin servers, reducing the load on infrastructure during high-demand periods.

**3. Explain the concept of "server less" computing in the context of AWS Lambda ?**

**Concept of "server less" computing in the context of AWS**

**Lambda**

"Serverless" computing, particularly in the context of AWS Lambda, refers to a cloud computing execution model where the cloud provider (in this case, AWS) dynamically manages the allocation of machine resources.

With AWS Lambda, you write your code and upload it to the service, and AWS takes care of deploying, scaling, and managing the underlying infrastructure needed to run that code.

You don't need to provision or manage servers; instead, AWS automatically executes your code in response to triggers (such as HTTP requests, database events, or file uploads) and charges you only for the compute time consumed by your code.

This model allows developers to focus solely on writing code without worrying about infrastructure management, leading to increased agility, scalability, and cost-efficiency.